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NEWS 5   DEC 14   2006 MeSH terms loaded for MEDLINE file segment of TOXCENTER
NEWS 6   DEC 14   CA/CAplus to be enhanced with updated IPC codes
NEWS 7   DEC 21   IPC search and display fields enhanced in CA/CAplus with the
                   IPC reform
NEWS 8   DEC 23   New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/
                   USPAT2

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               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005.
               V8.0 USERS CAN OBTAIN THE UPGRADE TO V8.01 AT
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FILE 'HOME' ENTERED AT 11:47:23 ON 12 JAN 2006

=> FIL STNGUIDE
COST IN U.S. DOLLARS   SINCE FILE   TOTAL
                                                ENTRY   SESSION
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LAST RELOADED: Jan 6, 2006 (20060106/UP).

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=> FIL HOME
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                                               ENTRY       SESSION
FULL ESTIMATED COST                             0.06         0.27


FILE 'HOME' ENTERED AT 11:47:42 ON 12 JAN 2006

=> file caplus
COST IN U.S. DOLLARS                        SINCE FILE      TOTAL
                                               ENTRY       SESSION
FULL ESTIMATED COST                             0.21         0.48

FILE 'CAPLUS' ENTERED AT 11:47:54 ON 12 JAN 2006
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FILE LAST UPDATED: 11 Jan 2006  (20060111/ED)

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=> e tibbetts rs/au
E1          1       TIBBETTS RAYMOND E/AU
E2          2       TIBBETTS ROBERT J/AU
E3          0 --> TIBBETTS RS/AU
E4          2       TIBBETTS RUSSELL D R/AU
E5          3       TIBBETTS S A/AU
E6          1       TIBBETTS S J/AU
E7          3       TIBBETTS S M/AU
E8          4       TIBBETTS SARAH J/AU
E9          1       TIBBETTS SCOTT/AU
E10        14       TIBBETTS SCOTT A/AU
E11         1       TIBBETTS SCOTT AARON/AU
E12         1       TIBBETTS STANELY J/AU


=> e tibbetts r s/au
E1          1       TIBBETTS P H/AU
E2         19       TIBBETTS P J C/AU
E3          0 --> TIBBETTS R S/AU
E4         18       TIBBETTS RANDAL S/AU
E5          1       TIBBETTS RANDAL SCOT/AU
E6          1       TIBBETTS RAYMOND E/AU
E7          2       TIBBETTS ROBERT J/AU
E8          2       TIBBETTS RUSSELL D R/AU
E9          3       TIBBETTS S A/AU
E10         1       TIBBETTS S J/AU
E11         3       TIBBETTS S M/AU
E12         4       TIBBETTS SARAH J/AU

=> s e4 and py=1999
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          18 "TIBBETTS RANDAL S"/AU
      960839 PY=1999
L1           2 "TIBBETTS RANDAL S"/AU AND PY=1999

=> d bi 1-2
'BI' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS --------- GI and AB
ALL --------- BIB, AB, IND, RE
APPS -------- AI, PRAI
BIB --------- AN, plus Bibliographic Data and PI table (default)
CAN --------- List of CA abstract numbers without answer numbers
CBIB -------- AN, plus Compressed Bibliographic Data
CLASS ------- IPC, NCL, ECLA, FTERM
DALL -------- ALL, delimited (end of each field identified)
DMAX -------- MAX, delimited for post-processing
FAM --------- AN, PI and PRAI in table, plus Patent Family data
FBIB -------- AN, BIB, plus Patent FAM
IND --------- Indexing data
IPC --------- International Patent Classifications
MAX --------- ALL, plus Patent FAM, RE
PATS -------- PI, SO
SAM --------- CC, SX, TI, ST, IT
SCAN -------- CC, SX, TI, ST, IT (random display, no answer numbers;
                 SCAN must be entered on the same line as the DISPLAY,
                 e.g., D SCAN or DISPLAY SCAN)
STD --------- BIB, CLASS

IABS -------- ABS, indented with text labels
IALL -------- ALL, indented with text labels
IBIB -------- BIB, indented with text labels
IMAX -------- MAX, indented with text labels
ISTD -------- STD, indented with text labels

OBIB -------- AN, plus Bibliographic Data (original)
OIBIB ------- OBIB, indented with text labels

SBIB -------- BIB, no citations
SIBIB ------- IBIB, no citations

HIT --------- Fields containing hit terms
HITIND ------ IC, ICA, ICI, NCL, CC and index field (ST and IT)
                 containing hit terms
HITRN ------- HIT RN and its text modification
HITSTR ------ HIT RN, its text modification, its CA index name, and
                 its structure diagram
HITSEQ ------ HIT RN, its text modification, its CA index name, its
                 structure diagram, plus NTE and SEQ fields
FHITSTR ----- First HIT RN, its text modification, its CA index name, and
                 its structure diagram
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
                 structure diagram, plus NTE and SEQ fields
KWIC -------- Hit term plus 20 words on either side
OCC --------- Number of occurrence of hit term and field in which it occurs

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FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC
to view a specified Accession Number.
ENTER DISPLAY FORMAT (BIB):
ENTER DISPLAY FORMAT (BIB):bib

L1   ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
AN   1999:580525 CAPLUS
DN   131:283366
TI   Inhibition of ATM and ATR kinase activities by the radiosensitizing agent,
       caffeine
AU   Sarkaria, Jann N.; Busby, Ericka C.; **Tibbetts, Randal S.**; Roos,
       Pia; Taya, Yoichi; Karnitz, Larry M.; Abraham, Robert T.
CS   Division of Oncology Research, Mayo Clinic, Rochester, MN, 55905, USA
SO   Cancer Research (**1999**), 59(17), 4375-4382
       CODEN: CNREA8; ISSN: 0008-5472
PB   AACR Subscription Office
DT   Journal
LA   English
RE.CNT 53   THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD
                ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1   ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
AN   1999:107559 CAPLUS
DN   130:292351
TI   A role for ATR in the DNA damage-induced phosphorylation of p53
AU   **Tibbetts, Randal S.**; Brumbaugh, Kathryn M.; Williams, Josie M.;
       Sarkaria, Jann N.; Cliby, William A.; Shieh, Sheau-Yann; Taya, Yoichi;
       Prives, Carol; Abraham, Robert T.
CS   Department of Pharmacology and Cancer Cell Biology, Duke University,
       Durham, NC, 27710, USA
SO   Genes & Development (**1999**), 13(2), 152-157
       CODEN: GEDEEP; ISSN: 0890-9369
PB   Cold Spring Harbor Laboratory Press
DT   Journal
LA   English
RE.CNT 35   THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
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=> d ind 2

L1   ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
CC   3-4 (Biochemical Genetics)
       Section cross-reference(s): 8, 13
ST   DNA damage phosphorylation p53 ATP protein human fibroblast
IT   Proteins, specific or class
       RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
       (Biological study); PROC (Process)
          (ATM-Rad3-related (ATR); a role for ATR in DNA damage-induced
          phosphorylation of p53)
IT   Animal cell line
          (GM847 and AT3B1; a role for ATR in DNA damage-induced phosphorylation
          of p53)
IT   Gene, animal
       RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
       (Biological study); PROC (Process)
          (TP53; a role for ATR in DNA damage-induced phosphorylation of p53)
IT   UV radiation
          (a role for ATR in DNA damage-induced phosphorylation of p53)
IT   p53 (protein)
       RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
       (Biological study); PROC (Process)
          (a role for ATR in DNA damage-induced phosphorylation of p53)
IT   DNA
       RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL

```
            (Biological study); PROC (Process)
              (damage, a role for ATR in DNA damage-induced phosphorylation of p53)
      IT    Gamma ray
              (irradiation; a role for ATR in DNA damage-induced phosphorylation of p53)
      IT    Phosphorylation, biological
              (of p53 Ser-15; a role for ATR in DNA damage-induced phosphorylation of
              p53)


      => file reg
      COST IN U.S. DOLLARS                              SINCE FILE      TOTAL
                                                          ENTRY       SESSION
      FULL ESTIMATED COST                                  9.27         9.75


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      DICTIONARY FILE UPDATES:   10 JAN 2006  HIGHEST RN 871658-99-0

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      *                                                                   *
      * The CA roles and document type information have been removed from *
      * the IDE default display format and the ED field has been added,   *
      * effective March 20, 2005.  A new display format, IDERL, is now    *
      * available and contains the CA role and document type information. *
      *                                                                   *
      *********************************************************************

      Structure search iteration limits have been increased.  See HELP SLIMITS
      for details.

      REGISTRY includes numerically searchable data for experimental and
      predicted properties as well as tags indicating availability of
      experimental property data in the original document.  For information
      on property searching in REGISTRY, refer to:

      http://www.cas.org/ONLINE/UG/regprops.html

      => e ATM-Rad3-related/cn
      E1            1     ATM-P/CN
      E2            1     ATM-P (POLYMER)/CN
      E3            0 --> ATM-RAD3-RELATED/CN
      E4            1     ATM-RELATED KINASE (ASPERGILLUS NIDULANS CLONE W24C04 GENE U
                          VSB)/CN
      E5            1     ATM./CN
      E6            1     ATM61.25/CN
      E7            1     ATMAC/CN
      E8            1     ATMC/CN
      E9            1     ATMER 100/CN
      E10           1     ATMER 1007/CN
      E11           1     ATMER 1013/CN
      E12           1     ATMER 103/CN
```

```
=> e atr
E1              1       ATQL3/BI
E2              1       ATQL4/BI
E3           6161 -->   ATR/BI
E4           4102        ATR01/BI
E5           4427        ATR02/BI
E6             23        ATR1/BI
E7              1        ATR14/BI
E8             16        ATR1NDWSB/BI
E9              8        ATR2/BI
E10             1        ATR228/BI
E11            14        ATR3/BI
E12             1        ATR35/BI


=> e atr/cn
E1              1       ATPTPKIS1 (ARABIDOPSIS THALIANA F4F15.290 GENE)/CN
E2              1       ATPTPKIS1 ALTERNATE (ARABIDOPSIS THALIANA ALTERNATE SPLICING
                          F4F15.290 GENE)/CN
E3              1 -->   ATR/CN
E4              1       ATR 077/CN
E5              1       ATR 180/CN
E6              1       ATR 180KZ/A3/CN
E7              1       ATR 200/CN
E8              1       ATR 2005/CN
E9              1       ATR 2009/CN
E10             1       ATR 2010/CN
E11             1       ATR 310/CN
E12             1       ATR 63/CN


=> s atm and atr
            437 ATM
              2 ATMS
            439 ATM
                 (ATM OR ATMS)
           6161 ATR
             12 ATRS
           6173 ATR
                 (ATR OR ATRS)
L2            1 ATM AND ATR


=> d

L2     ANSWER 1 OF 1  REGISTRY   COPYRIGHT 2006 ACS on STN
RN     182970-52-1  REGISTRY
ED     Entered STN:  12 Nov 1996
CN     Kinase (phosphorylating), protein, Atr (9CI)   (CA INDEX NAME)
OTHER NAMES:
CN     Ataxia telangiectasia and Rad3 related protein
CN     ATM- and Rad3-related protein kinase
CN     ATR kinase
CN     Atr protein kinase
CN     Checkpoint kinase
CN     Checkpoint kinase ATR
CN     DNA-dependent p53 kinase ATR
CN     Protein kinase Atr
MF     Unspecified
CI     MAN
SR     CA
LC     STN Files:   BIOSIS, CA, CAPLUS, TOXCENTER, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
            264 REFERENCES IN FILE CA (1907 TO DATE)
              4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
            268 REFERENCES IN FILE CAPLUS (1907 TO DATE)
```

```
=> set exp cont
SET COMMAND COMPLETED

=> sel 12 chem
E13 THROUGH E21 ASSIGNED

=> index bioscience
FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                              ENTRY          SESSION
FULL ESTIMATED COST                           13.51          23.26

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE,
      AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS,
      CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB,
      DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 11:53:40 ON 12 JAN 2006

70 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> s e13-21
          1     FILE ADISCTI
          3     FILE ADISINSIGHT
          9     FILE AGRICOLA
    7 FILES SEARCHED...
          7     FILE AQUASCI
         41     FILE BIOENG
        468     FILE BIOSIS
         20     FILE BIOTECHABS
   11 FILES SEARCHED...
         20     FILE BIOTECHDS
        129     FILE BIOTECHNO
   13 FILES SEARCHED...
          9     FILE CABA
        709     FILE CAPLUS
          4     FILE CIN
   17 FILES SEARCHED...
          5     FILE CONFSCI
         61     FILE DDFU
       4219     FILE DGENE
   23 FILES SEARCHED...
         27     FILE DISSABS
         76     FILE DRUGU
         16     FILE EMBAL
        722     FILE EMBASE
   29 FILES SEARCHED...
        344     FILE ESBIOBASE
   30 FILES SEARCHED...
         34     FILE FEDRIP
   35 FILES SEARCHED...
       3147     FILE GENBANK
         39     FILE IFIPAT
          1     FILE IMSDRUGNEWS
          9     FILE JICST-EPLUS
        240     FILE LIFESCI
   44 FILES SEARCHED...
        874     FILE MEDLINE
          6     FILE NTIS
   47 FILES SEARCHED...
        107     FILE PASCAL
   50 FILES SEARCHED...
```

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         5    FILE PHAR
         1    FILE PHARMAML
         5    FILE PHIN
         9    FILE PROMT
        79    FILE PROUSDDR
   58 FILES SEARCHED...
       438    FILE SCISEARCH
   60 FILES SEARCHED...
         1    FILE SYNTHLINE
       594    FILE TOXCENTER
       166    FILE USPATFULL
         8    FILE USPAT2
   67 FILES SEARCHED...
        40    FILE WPIDS
   69 FILES SEARCHED...
        40    FILE WPINDEX

   41 FILES HAVE ONE OR MORE ANSWERS,   70 FILES SEARCHED IN STNINDEX

L3    QUE ("ATAXIA TELANGIECTASIA AND RAD3 RELATED PROTEIN"/BI OR "ATM- AND RAD3
      -RELATED PROTEIN KINASE"/BI OR "ATR KINASE"/BI OR "ATR PROTEIN KINASE"
      /BI OR "CHECKPOINT KINASE ATR"/BI OR "CHECKPOINT KINASE"/BI OR "DNA-DE
      PENDENT P53 KINASE ATR"/BI OR "PROTEIN KINASE ATR"/BI OR 182970-52-1/B
      I)

=> s 13 and p53 and py<1999
         0*   FILE ADISINSIGHT
    7 FILES SEARCHED...
   11 FILES SEARCHED...
   13 FILES SEARCHED...
         2    FILE CAPLUS
   17 FILES SEARCHED...
         0*   FILE CONFSCI
   23 FILES SEARCHED...
   29 FILES SEARCHED...
   30 FILES SEARCHED...
         0*   FILE FEDRIP
         0*   FILE FOREGE
   35 FILES SEARCHED...
   41 FILES SEARCHED...
         2    FILE MEDLINE
   47 FILES SEARCHED...
   50 FILES SEARCHED...
         0*   FILE PHAR
         0*   FILE PROUSDDR
   57 FILES SEARCHED...
   62 FILES SEARCHED...
         1    FILE USPAT2
   67 FILES SEARCHED...
   68 FILES SEARCHED...

    3 FILES HAVE ONE OR MORE ANSWERS,   70 FILES SEARCHED IN STNINDEX

L4    QUE L3 AND P53 AND PY<1999

=> file hits
COST IN U.S. DOLLARS                          SINCE FILE        TOTAL
                                                ENTRY          SESSION
FULL ESTIMATED COST                             22.57           45.83
```

```
FILE 'MEDLINE' ENTERED AT 12:15:48 ON 12 JAN 2006

FILE 'USPAT2' ENTERED AT 12:15:48 ON 12 JAN 2006
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=> s l4
   2 FILES SEARCHED...
L5              5 L4

=> dup rem
ENTER L# LIST OR (END):l5
PROCESSING COMPLETED FOR L5
L6              5 DUP REM L5 (0 DUPLICATES REMOVED)

=> d bib abs 1-5
```

L6   ANSWER 1 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
AN   2004:681308 CAPLUS
DN   141:202073
TI   Detection of protein interaction by complementation of fragments of
      reporter proteins and its use in high throughput drug screening
IN   Michnick, Stephen William Watson; Remy, Ingrid; MacDonald, Marnie;
      Lamerdin, Jane; Yu, Helen; Westwick, John K.
PA   Odyssey Thera, Inc., USA
SO   U.S. Pat. Appl. Publ., 75 pp., Cont.-in-part of U.S. Pat. Appl. 2004
      38,298.
      CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 13

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004161787	A1	20040819	US 2004-772021	20040205
CA 2196496	AA	19980731	CA 1997-2196496	19970131 <--
US 6270964	B1	20010807	US 1998-17412	19980202
EP 1605042	A2	20051214	EP 2005-17291	19980202

        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, FI

CA 2244349	AA	20000130	CA 1998-2244349	19980730
US 6428951	B1	20020806	US 2000-499464	20000207
US 2001047526	A1	20011129	US 2001-851084	20010509
US 6872871	B2	20050329		
US 2003049688	A1	20030313	US 2002-154758	20020524
US 6929916	B2	20050816		
US 2004038298	A1	20040226	US 2003-353090	20030129
CA 2514843	AA	20040819	CA 2004-2514843	20040206
WO 2004070351	A2	20040819	WO 2004-US2008	20040206
WO 2004070351	A3	20050310		

        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
            CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
            GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
            LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI
        RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,
            BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
            MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,
            GQ, GW, ML, MR, NE, SN, TD, TG

| EP 1590476 | A2 | 20051102 | EP 2004-708966 | 20040206 |

        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

US 2005233348	A1	20051020	US 2004-2259	20041203
US 2005255452	A1	20051117	US 2005-90215	20050328
PRAI CA 1997-2196496	A	19970131		
US 1998-17412	A1	19980202		
US 2000-499464	A1	20000207		
US 2002-154758	A1	20020524		

proteins that also associate with chromatin during meiotic prophase I.
The genetic and regulatory interaction between Atm and mammalian Chk1
appears to be important for integrating DNA-damage repair with cell-cycle
arrest. RESULTS: We have identified structural homologs of yeast Chk1 in
human and mouse. Chk1(Hu/Mo) has protein kinase activity and is expressed
in the testis. Chk1 accumulates in late zygotene and pachytene
spermatocytes and is present along synapsed meiotic chromosomes. Chk1
localizes along the unsynapsed axes of X and Y chromosomes in pachytene
spermatocytes. The association of Chk1 with meiotic chromosomes and
levels of Chk1 protein depend upon a functional Atm gene product, but Chk1
is not dependent upon **p53** for meiosis I functions. Mapping of
CHK1 to human chromosomes indicates that the gene is located at 11q22-23,
a region marked by frequent deletions and loss of heterozygosity in human
tumors. CONCLUSIONS: The Atm-dependent presence of Chk1 in mouse cells
and along meiotic chromosomes, and the late pachynema co-localization of
Atr and Chk1 on the unsynapsed axes of the paired X and Y chromosomes,
suggest that Chk1 acts as an integrator for Atm and Atr signals and may be
involved in monitoring the processing of meiotic recombination.
Furthermore, mapping of the CHK1 gene to a region of frequent loss of
heterozygosity in human tumors at 11q22-23 indicates that the CHK1 gene is
a candidate tumor suppressor gene.

L6	ANSWER 5 OF 5	MEDLINE on STN
AN	1998044309	MEDLINE
DN	PubMed ID: 9382823	
TI	Cell-cycle signaling: Atm displays its many talents.	
AU	Westphal C H	
CS	Department of Genetics and Howard Hughes Medical Institute, Harvard Medical School, 200 Longwood Avenue, Boston, Massachusetts 02115, USA.. westphal@rascal.med.harvard.edu	
SO	Current biology : CB, **(1997 Dec 1)** 7 (12) R789-92. Ref: 25 Journal code: 9107782. ISSN: 0960-9822.	
CY	ENGLAND: United Kingdom	
DT	Journal; Article; (JOURNAL ARTICLE) General Review; (REVIEW) (REVIEW, TUTORIAL)	
LA	English	
FS	Priority Journals	
EM	199802	
ED	Entered STN: 19980226 Last Updated on STN: 19980226 Entered Medline: 19980219	
AB	The discovery of multiple signaling cascades downstream of Atm may lead to a clearer understanding of the diverse defects seen in ataxia-telangiectasia. These pathways - which include evolutionarily conserved Chk1 and Atr, and non-conserved p21, **p53** and AbI - guard genomic integrity after DNA damage.	

```
=> d his

        (FILE 'HOME' ENTERED AT 11:47:23 ON 12 JAN 2006)

        FILE 'STNGUIDE' ENTERED AT 11:47:36 ON 12 JAN 2006

        FILE 'HOME' ENTERED AT 11:47:42 ON 12 JAN 2006

        FILE 'CAPLUS' ENTERED AT 11:47:54 ON 12 JAN 2006
                 E TIBBETTS RS/AU
                 E TIBBETTS R S/AU
L1               2 S E4 AND PY=1999

        FILE 'REGISTRY' ENTERED AT 11:51:17 ON 12 JAN 2006
                 E ATM-RAD3-RELATED/CN
                 E ATR
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```
              E ATR/CN
L2         1 S ATM AND ATR
              SET EXP CONT
              SEL L2 CHEM

   INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE,
   AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS,
   CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB,
   DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 11:53:40 ON 12 JAN 2006
              SEA E13-21
              ---------
          1    FILE ADISCTI
          3    FILE ADISINSIGHT
          9    FILE AGRICOLA
          7    FILE AQUASCI
         41    FILE BIOENG
        468    FILE BIOSIS
         20    FILE BIOTECHABS
         20    FILE BIOTECHDS
        129    FILE BIOTECHNO
          9    FILE CABA
        709    FILE CAPLUS
          4    FILE CIN
          5    FILE CONFSCI
         61    FILE DDFU
       4219    FILE DGENE
         27    FILE DISSABS
         76    FILE DRUGU
         16    FILE EMBAL
        722    FILE EMBASE
        344    FILE ESBIOBASE
         34    FILE FEDRIP
       3147    FILE GENBANK
         39    FILE IFIPAT
          1    FILE IMSDRUGNEWS
          9    FILE JICST-EPLUS
        240    FILE LIFESCI
        874    FILE MEDLINE
          6    FILE NTIS
        107    FILE PASCAL
          5    FILE PHAR
          1    FILE PHARMAML
          5    FILE PHIN
          9    FILE PROMT
         79    FILE PROUSDDR
        438    FILE SCISEARCH
          1    FILE SYNTHLINE
        594    FILE TOXCENTER
        166    FILE USPATFULL
          8    FILE USPAT2
         40    FILE WPIDS
         40    FILE WPINDEX
L3         QUE ("ATAXIA TELANGIECTASIA AND RAD3 RELATED PROTEIN"/BI OR "AT
              ---------
              SEA L3 AND P53 AND PY<1999
              ---------
         0*   FILE ADISINSIGHT
          2   FILE CAPLUS
         0*   FILE CONFSCI
         0*   FILE FEDRIP
         0*   FILE FOREGE
          2   FILE MEDLINE
         0*   FILE PHAR
         0*   FILE PROUSDDR
          1   FILE USPAT2
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L4          QUE L3 AND P53 AND PY<1999
                ---------

     FILE 'CAPLUS, MEDLINE, USPAT2' ENTERED AT 12:15:48 ON 12 JAN 2006
L5          5 S L4
L6          5 DUP REM L5 (0 DUPLICATES REMOVED)

=> log y
COST IN U.S. DOLLARS                      SINCE FILE      TOTAL
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STN INTERNATIONAL LOGOFF AT 12:17:06 ON 12 JAN 2006
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        FILE 'CAPLUS, MEDLINE, USPAT2' ENTERED AT 12:15:48 ON 12 JAN 2006
L5   5 S L4
L6   5 DUP REM L5 (0 DUPLICATES REMOVED)

=> log y
COST IN U.S. DOLLARS   SINCE FILE   TOTAL
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FULL ESTIMATED COST   74.55   120.38

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)   SINCE FILE   TOTAL
                                                  ENTRY   SESSION
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STN INTERNATIONAL LOGOFF AT 12:17:06 ON 12 JAN 2006

PNAS (vol. 95, pages 7445-7450, June 1998) disclose that ATR is a Rad3 gene product and mediates responses to ionizing and UV radiation in human cells. The relationship between ATM and ATR is discussed. For example, ATM and ATR have some overlap in function, however, it is unlikely that ATM represents a direct human analogue of either rad3+ or MEC1 (Mec1 (yeast) and Rad3 (human) mutants are sensitive to a wide array of DNA damaging agents i.e. UV and X-rays). To clarify the role of ATR in DNA damage responses and its relationship to ATM, the function of ATR in both normal human cells and cells with defects in DNA damage response pathways, specifically cells lacking functional ATM or p53 was examined. Found that the cell killing effect of ATR.KD actually may be enhanced in the absence of functional p53. The reference is silent on an assay to identify compounds to modulate the p53-ATR interaction wherein said ATR phosphorylates p53.

US Patent No. 6632936

Disclose assay methods for selecting compounds which modulate the activity of S. pombe rad3 gene products and its human homologue ATR. The patent deals with screening assays for compounds that inhibit or activate ATR activity or the activity of mutated forms of ATR. The patent discloses that "compounds that modulate interaction between Rad3/ATR and other cellular components may be used in methods of treating cancer. For example, if a particular form of cancer results from a mutation in a gene other than ATR, such as the p53 gene, an agent which inhibits the transcription or the enzymatic activity of ATR and thus the G2 cell cycle checkpoint may be used to render cancerous cells more susceptible to chemotherapy or radiation therapy. The reference does not teach an assay to identify a compound to modulate the p53-ATR interaction. The patent does not establish that ATR phosphorylates p53 and identify a compound that modulates said interaction.

WO97/09433

Disclose the use of reporter fragment-labeled p53 and checkpoint kinase Chk1 to screen for the ability of known drugs to modulate the interaction of the two proteins. There's a discussion on the autophosphorylation activity of Rad3/ATR and compounds that modulate said protein. As the U.S. Patent is the national stage of the WO, the teaching is the same. Thus, the WO document disclose: "compounds that modulate interaction between Rad3/ATR and other cellular components may be used in methods of treating cancer. For example, if a particular form of cancer results from a mutation in a gene other than ATR, such as the p53 gene, an agent which inhibits the transcription or the enzymatic activity of ATR and thus the G2 cell cycle checkpoint may be used to render cancerous cells more susceptible to chemotherapy or radiation therapy. However, does not teach an assay to identify a compound to modulate the p53-ATR interaction. The WO does not establish that ATR phosphorylates p53 and identify a compound that modulates said interaction.

L4   QUE L3 AND P53 AND PY<1999

     FILE 'CAPLUS, MEDLINE, USPAT2' ENTERED AT 12:15:48 ON 12 JAN 2006
L5   5 S L4
L6   5 DUP REM L5 (0 DUPLICATES REMOVED)

=> log y
COST IN U.S. DOLLARS   SINCE FILE   TOTAL
                                                 ENTRY   SESSION
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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)   SINCE FILE   TOTAL
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NEWS 6   DEC 14   CA/CAplus to be enhanced with updated IPC codes
NEWS 7   DEC 21   IPC search and display fields enhanced in CA/CAplus with the
                   IPC reform
NEWS 8   DEC 23   New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/
                   USPAT2

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               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
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=> FIL STNGUIDE
COST IN U.S. DOLLARS   SINCE FILE   TOTAL
                                              ENTRY   SESSION
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LAST RELOADED: Jan 6, 2006 (20060106/UP).

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=> FIL HOME
COST IN U.S. DOLLARS                              SINCE FILE      TOTAL
                                                    ENTRY        SESSION
FULL ESTIMATED COST                                 0.06          0.27


FILE 'HOME' ENTERED AT 11:47:42 ON 12 JAN 2006

=> file caplus
COST IN U.S. DOLLARS                              SINCE FILE      TOTAL
                                                    ENTRY        SESSION
FULL ESTIMATED COST                                 0.21          0.48


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FILE LAST UPDATED: 11 Jan 2006  (20060111/ED)

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E1          1       TIBBETTS RAYMOND E/AU
E2          2       TIBBETTS ROBERT J/AU
E3          0 --> TIBBETTS RS/AU
E4          2       TIBBETTS RUSSELL D R/AU
E5          3       TIBBETTS S A/AU
E6          1       TIBBETTS S J/AU
E7          3       TIBBETTS S M/AU
E8          4       TIBBETTS SARAH J/AU
E9          1       TIBBETTS SCOTT/AU
E10        14       TIBBETTS SCOTT A/AU
E11         1       TIBBETTS SCOTT AARON/AU
E12         1       TIBBETTS STANELY J/AU


=> e tibbetts r s/au
E1          1       TIBBETTS P H/AU
E2         19       TIBBETTS P J C/AU
E3          0 --> TIBBETTS R S/AU
E4         18       TIBBETTS RANDAL S/AU
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E6          1       TIBBETTS RAYMOND E/AU
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E11         3       TIBBETTS S M/AU
E12         4       TIBBETTS SARAH J/AU

=> s e4 and py=1999
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            18 "TIBBETTS RANDAL S"/AU
       960839 PY=1999
L1          2 "TIBBETTS RANDAL S"/AU AND PY=1999

=> d bi 1-2
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DALL -------- ALL, delimited (end of each field identified)
DMAX -------- MAX, delimited for post-processing
FAM --------- AN, PI and PRAI in table, plus Patent Family data
FBIB -------- AN, BIB, plus Patent FAM
IND --------- Indexing data
IPC --------- International Patent Classifications
MAX --------- ALL, plus Patent FAM, RE
PATS -------- PI, SO
SAM --------- CC, SX, TI, ST, IT
SCAN -------- CC, SX, TI, ST, IT (random display, no answer numbers;
              SCAN must be entered on the same line as the DISPLAY,
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STD --------- BIB, CLASS

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IALL -------- ALL, indented with text labels
IBIB -------- BIB, indented with text labels
IMAX -------- MAX, indented with text labels
ISTD -------- STD, indented with text labels

OBIB -------- AN, plus Bibliographic Data (original)
OIBIB ------- OBIB, indented with text labels

SBIB -------- BIB, no citations
SIBIB ------- IBIB, no citations

HIT --------- Fields containing hit terms
HITIND ------ IC, ICA, ICI, NCL, CC and index field (ST and IT)
              containing hit terms
HITRN ------- HIT RN and its text modification
HITSTR ------ HIT RN, its text modification, its CA index name, and
              its structure diagram
HITSEQ ------ HIT RN, its text modification, its CA index name, its
              structure diagram, plus NTE and SEQ fields
FHITSTR ----- First HIT RN, its text modification, its CA index name, and
              its structure diagram
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
              structure diagram, plus NTE and SEQ fields
KWIC -------- Hit term plus 20 words on either side
OCC --------- Number of occurrence of hit term and field in which it occurs
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ENTER DISPLAY FORMAT (BIB):
ENTER DISPLAY FORMAT (BIB):bib

L1   ANSWER 1 OF 2   CAPLUS   COPYRIGHT 2006 ACS on STN
AN   1999:580525 CAPLUS
DN   131:283366
TI   Inhibition of ATM and ATR kinase activities by the radiosensitizing agent,
        caffeine
AU   Sarkaria, Jann N.; Busby, Ericka C.; **Tibbetts, Randal S.**; Roos,
        Pia; Taya, Yoichi; Karnitz, Larry M.; Abraham, Robert T.
CS   Division of Oncology Research, Mayo Clinic, Rochester, MN, 55905, USA
SO   Cancer Research (**1999**), 59(17), 4375-4382
        CODEN: CNREA8; ISSN: 0008-5472
PB   AACR Subscription Office
DT   Journal
LA   English
RE.CNT 53   THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD
                ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1   ANSWER 2 OF 2   CAPLUS   COPYRIGHT 2006 ACS on STN
AN   1999:107559 CAPLUS
DN   130:292351
TI   A role for ATR in the DNA damage-induced phosphorylation of p53
AU   **Tibbetts, Randal S.**; Brumbaugh, Kathryn M.; Williams, Josie M.;
        Sarkaria, Jann N.; Cliby, William A.; Shieh, Sheau-Yann; Taya, Yoichi;
        Prives, Carol; Abraham, Robert T.
CS   Department of Pharmacology and Cancer Cell Biology, Duke University,
        Durham, NC, 27710, USA
SO   Genes & Development (**1999**), 13(2), 152-157
        CODEN: GEDEEP; ISSN: 0890-9369
PB   Cold Spring Harbor Laboratory Press
DT   Journal
LA   English
RE.CNT 35   THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
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=> d ind 2

L1   ANSWER 2 OF 2   CAPLUS   COPYRIGHT 2006 ACS on STN
CC   3-4 (Biochemical Genetics)
        Section cross-reference(s): 8, 13
ST   DNA damage phosphorylation p53 ATP protein human fibroblast
IT   Proteins, specific or class
        RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
        (Biological study); PROC (Process)
            (ATM-Rad3-related (ATR); a role for ATR in DNA damage-induced
            phosphorylation of p53)
IT   Animal cell line
            (GM847 and AT3B1; a role for ATR in DNA damage-induced phosphorylation
            of p53)
IT   Gene, animal
        RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
        (Biological study); PROC (Process)
            (TP53; a role for ATR in DNA damage-induced phosphorylation of p53)
IT   UV radiation
            (a role for ATR in DNA damage-induced phosphorylation of p53)
IT   p53 (protein)
        RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
        (Biological study); PROC (Process)
            (a role for ATR in DNA damage-induced phosphorylation of p53)
IT   DNA
        RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL

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          (Biological study); PROC (Process)
               (damage, a role for ATR in DNA damage-induced phosphorylation of p53)
IT   Gamma ray
               (irradiation; a role for ATR in DNA damage-induced phosphorylation of p53)
IT   Phosphorylation, biological
               (of p53 Ser-15; a role for ATR in DNA damage-induced phosphorylation of
               p53)


=> file reg
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                ENTRY        SESSION
FULL ESTIMATED COST                              9.27          9.75

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on property searching in REGISTRY, refer to:

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=> e ATM-Rad3-related/cn
E1              1      ATM-P/CN
E2              1      ATM-P (POLYMER)/CN
E3              0 --> ATM-RAD3-RELATED/CN
E4              1      ATM-RELATED KINASE (ASPERGILLUS NIDULANS CLONE W24C04 GENE U
                      VSB)/CN
E5              1      ATM./CN
E6              1      ATM61.25/CN
E7              1      ATMAC/CN
E8              1      ATMC/CN
E9              1      ATMER 100/CN
E10             1      ATMER 1007/CN
E11             1      ATMER 1013/CN
E12             1      ATMER 103/CN
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=> e atr
E1              1       ATQL3/BI
E2              1       ATQL4/BI
E3           6161 --> ATR/BI
E4           4102       ATR01/BI
E5           4427       ATR02/BI
E6             23       ATR1/BI
E7              1       ATR14/BI
E8             16       ATR1NDWSB/BI
E9              8       ATR2/BI
E10             1       ATR228/BI
E11            14       ATR3/BI
E12             1       ATR35/BI

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E2              1       ATPTPKIS1 ALTERNATE (ARABIDOPSIS THALIANA ALTERNATE SPLICING
                          F4F15.290 GENE)/CN
E3              1 --> ATR/CN
E4              1       ATR 077/CN
E5              1       ATR 180/CN
E6              1       ATR 180KZ/A3/CN
E7              1       ATR 200/CN
E8              1       ATR 2005/CN
E9              1       ATR 2009/CN
E10             1       ATR 2010/CN
E11             1       ATR 310/CN
E12             1       ATR 63/CN

=> s atm and atr
            437 ATM
              2 ATMS
            439 ATM
                  (ATM OR ATMS)
           6161 ATR
             12 ATRS
           6173 ATR
                  (ATR OR ATRS)
L2            1 ATM AND ATR

=> d

L2    ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2006 ACS on STN
RN    182970-52-1  REGISTRY
ED    Entered STN:  12 Nov 1996
CN    Kinase (phosphorylating), protein, Atr (9CI)   (CA INDEX NAME)
OTHER NAMES:
CN    Ataxia telangiectasia and Rad3 related protein
CN    ATM- and Rad3-related protein kinase
CN    ATR kinase
CN    Atr protein kinase
CN    Checkpoint kinase
CN    Checkpoint kinase ATR
CN    DNA-dependent p53 kinase ATR
CN    Protein kinase Atr
MF    Unspecified
CI    MAN
SR    CA
LC    STN Files:   BIOSIS, CA, CAPLUS, TOXCENTER, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
            264 REFERENCES IN FILE CA (1907 TO DATE)
              4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
            268 REFERENCES IN FILE CAPLUS (1907 TO DATE)
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=> set exp cont
SET COMMAND COMPLETED

=> sel 12 chem
E13 THROUGH E21 ASSIGNED

=> index bioscience
FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS                              SINCE FILE      TOTAL
                                                  ENTRY         SESSION
FULL ESTIMATED COST                               13.51         23.26

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE,
      AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS,
      CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB,
      DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 11:53:40 ON 12 JAN 2006

70 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> s e13-21
          1     FILE ADISCTI
          3     FILE ADISINSIGHT
          9     FILE AGRICOLA
    7 FILES SEARCHED...
          7     FILE AQUASCI
         41     FILE BIOENG
        468     FILE BIOSIS
         20     FILE BIOTECHABS
   11 FILES SEARCHED...
         20     FILE BIOTECHDS
        129     FILE BIOTECHNO
   13 FILES SEARCHED...
          9     FILE CABA
        709     FILE CAPLUS
          4     FILE CIN
   17 FILES SEARCHED...
          5     FILE CONFSCI
         61     FILE DDFU
       4219     FILE DGENE
   23 FILES SEARCHED...
         27     FILE DISSABS
         76     FILE DRUGU
         16     FILE EMBAL
        722     FILE EMBASE
   29 FILES SEARCHED...
        344     FILE ESBIOBASE
   30 FILES SEARCHED...
         34     FILE FEDRIP
   35 FILES SEARCHED...
       3147     FILE GENBANK
         39     FILE IFIPAT
          1     FILE IMSDRUGNEWS
          9     FILE JICST-EPLUS
        240     FILE LIFESCI
   44 FILES SEARCHED...
        874     FILE MEDLINE
          6     FILE NTIS
   47 FILES SEARCHED...
        107     FILE PASCAL
   50 FILES SEARCHED...
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          5    FILE PHAR
          1    FILE PHARMAML
          5    FILE PHIN
          9    FILE PROMT
         79    FILE PROUSDDR
 58 FILES SEARCHED...
        438    FILE SCISEARCH
 60 FILES SEARCHED...
          1    FILE SYNTHLINE
        594    FILE TOXCENTER
        166    FILE USPATFULL
          8    FILE USPAT2
 67 FILES SEARCHED...
         40    FILE WPIDS
 69 FILES SEARCHED...
         40    FILE WPINDEX


   41 FILES HAVE ONE OR MORE ANSWERS,    70 FILES SEARCHED IN STNINDEX


L3   QUE ("ATAXIA TELANGIECTASIA AND RAD3 RELATED PROTEIN"/BI OR "ATM- AND RAD3
        -RELATED PROTEIN KINASE"/BI OR "ATR KINASE"/BI OR "ATR PROTEIN KINASE"
        /BI OR "CHECKPOINT KINASE ATR"/BI OR "CHECKPOINT KINASE"/BI OR "DNA-DE
        PENDENT P53 KINASE ATR"/BI OR "PROTEIN KINASE ATR"/BI OR 182970-52-1/B
        I)


=> s l3 and p53 and py<1999
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 11 FILES SEARCHED...
 13 FILES SEARCHED...
          2    FILE CAPLUS
 17 FILES SEARCHED...
          0*   FILE CONFSCI
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=> dup rem
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L6   5 DUP REM L5 (0 DUPLICATES REMOVED)

=> d bib abs 1-5

L6   ANSWER 1 OF 5   CAPLUS   COPYRIGHT 2006 ACS on STN
AN   2004:681308   CAPLUS
DN   141:202073
TI   Detection of protein interaction by complementation of fragments of
      reporter proteins and its use in high throughput drug screening
IN   Michnick, Stephen William Watson; Remy, Ingrid; MacDonald, Marnie;
      Lamerdin, Jane; Yu, Helen; Westwick, John K.
PA   Odyssey Thera, Inc., USA
SO   U.S. Pat. Appl. Publ., 75 pp., Cont.-in-part of U.S. Pat. Appl. 2004
      38,298.
      CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004161787	A1	20040819	US 2004-772021	20040205
	CA 2196496	AA	19980731	CA 1997-2196496	19970131 <--
	US 6270964	B1	20010807	US 1998-17412	19980202
	EP 1605042	A2	20051214	EP 2005-17291	19980202
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	CA 2244349	AA	20000130	CA 1998-2244349	19980730
	US 6428951	B1	20020806	US 2000-499464	20000207
	US 2001047526	A1	20011129	US 2001-851084	20010509
	US 6872871	B2	20050329		
	US 2003049688	A1	20030313	US 2002-154758	20020524
	US 6929916	B2	20050816		
	US 2004038298	A1	20040226	US 2003-353090	20030129
	CA 2514843	AA	20040819	CA 2004-2514843	20040206
	WO 2004070351	A2	20040819	WO 2004-US2008	20040206
	WO 2004070351	A3	20050310		
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	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1590476	A2	20051102	EP 2004-708966	20040206
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	US 2005233348	A1	20051020	US 2004-2259	20041203
	US 2005255452	A1	20051117	US 2005-90215	20050328
PRAI	CA 1997-2196496	A	19970131		
	US 1998-17412	A1	19980202		
	US 2000-499464	A1	20000207		
	US 2002-154758	A1	20020524		

in anticancer therapy.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

Reviewed

AB   In fission yeast, the rad3 gene product plays a critical role in sensing DNA
        structure defects and activating damage response pathways. A structural
        homolog of rad3 in humans (ATR) has been identified based on sequence
        similarity in the protein kinase domain. General information regarding
        ATR expression, protein kinase activity, and cellular localization is
        known, but its function in human cells remains undetd. In the current
        study, the ATR protein was examined by gel filtration of protein exts. and
        was found to exist predominantly as part of a large protein complex. A
        kinase-inactivated form of the ATR gene was prepared by site-directed
        mutagenesis and was used in transfection expts. to probe the function of
        this complex. Introduction of this kinase-dead ATR into a normal
        fibroblast cell line, an ATM-deficient fibroblast line derived from a
        patient with ataxia-telangiectasia, or a p53 mutant cell line
        all resulted in significant losses in cell viability. Clones expressing
        the kinase-dead ATR displayed increased sensitivity to x-rays and UV and a
        loss of checkpoint control. We conclude that ATR functions as a critical
        part of a protein complex that mediates responses to ionizing and UV
        radiation in human cells. These responses include effects on cell
        viability and cell cycle checkpoint control.

RE.CNT   22   THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
                 ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB   BACKGROUND: Checkpoint pathways prevent cell-cycle progression in the
        event of DNA lesions. Checkpoints are well defined in mitosis, where
        lesions can be the result of extrinsic damage, and they are critical in
        meiosis, where DNA breaks are a programmed step in meiotic recombination.
        In mitotic yeast cells, the Chk1 protein couples DNA repair to the
        cell-cycle machinery. The Atm and Atr proteins are mitotic cell-cycle

```
US 2003-353090        A2      20030129
US 2003-445225P       P       20030206
EP 1998-901905        A3      19980202
US 2000-203937P       P       20000512
US 2000-208485P       P       20000602
US 2001-851084        A3      20010509
US 2001-870018        A3      20010531
US 2004-772021        A       20040205
WO 2004-US2008        W       20040206
```

AB   A method of screening for protein interaction and for modulators of the
      interaction using the complementation of fragments of a reporter moiety is
      described. The method uses expression constructs for fusion proteins of
      the proteins of interest with fragments of a reporter protein. The
      fragments of the reporter protein do not sep. have a reporter activity.
      When the proteins interact, the two fragments are brought together to
      restore the reporter activity. The restoration of reporter activity can
      be used for high throughput screening for modulators of the interaction of
      the proteins. The method can be applied to unknown proteins identified by
      methods such as cDNA library screening or gene-by-gene interaction mapping
      in addition to those known to be involved in interactions. Fluorescent and
      luminescent proteins can be used in these assays. Methods of selecting
      suitable reporters for high-throughput or high-content (high-context)
      assays is described for a range of reporters, with particular detail
      provided for examples of monomeric enzymes and fluorescent proteins.
      Methods are described for constructing such assays for one or more steps
      in a biochem. pathway and testing the effects of compds. from libraries of
      candidate substances. Single-color and multi-color assays are disclosed.
      Further disclosed are universal expression vectors with cassettes that
      allow the rapid construction of assays for a large and diverse number of
      gene/reporter combinations. The development of such assays is shown to be
      straightforward, providing for a broad, flexible and biol. relevant
      platform for drug discovery. Use of reporter fragment-labeled **p53**
      and **checkpoint kinase** Chk1 to screen for the ability
      of known drugs to modulate the interaction of the two proteins is
      demonstrated. The use of the method to study the effects of proteins
      interacting with these two proteins on their interactions is also
      demonstrated.

```
L6    ANSWER 2 OF 5   USPAT2 on STN
AN        2003:10281   USPAT2
TI        Cell-cycle checkpoint genes
IN        Carr, Antony Michael, MRC Cell Mutation Unit, University of Sussex,
          Falmer Brighton BN1 9RR, UNITED KINGDOM
PI        US 6632936        B2      20031014
          WO 9709433   19970313                              <--
AI        US 1999-29047          19990511 (9)
          WO 1996-GB2197         19960906
PRAI  GB 1995-18220      19950906
DT        Utility
FS        GRANTED
EXNAM  Primary Examiner: Caputa, Anthony C.; Assistant Examiner: Nickol, Gary
          B.
LREP   Marshall, Gerstein & Borun
CLMN   Number of Claims: 6
ECL    Exemplary Claim: 1
DRWN   1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 3723
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
```

AB   This invention relates to a class of checkpoint genes and their
          polypeptide products which control progression through the cell cycle in
          eukaryotic cells. In particular this invention relates to
          Schizosaccharomyces pombe rad3 gene, to its human homologue (ATR) and to
          their encoded proteins. The invention further relates to assay methods
          for selecting compounds which modulate the activity of the polypeptide
          products of these checkpoint genes and the use of the selected compounds

```
US 2003-353090      A2      20030129
US 2003-445225P     P       20030206
EP 1998-901905      A3      19980202
US 2000-203937P     P       20000512
US 2000-208485P     P       20000602
US 2001-851084      A3      20010509
US 2001-870018      A3      20010531
US 2004-772021      A       20040205
WO 2004-US2008      W       20040206
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AB   A method of screening for protein interaction and for modulators of the
      interaction using the complementation of fragments of a reporter moiety is
      described. The method uses expression constructs for fusion proteins of
      the proteins of interest with fragments of a reporter protein. The
      fragments of the reporter protein do not sep. have a reporter activity.
      When the proteins interact, the two fragments are brought together to
      restore the reporter activity. The restoration of reporter activity can
      be used for high throughput screening for modulators of the interaction of
      the proteins. The method can be applied to unknown proteins identified by
      methods such as cDNA library screening or gene-by-gene interaction mapping
      in addition to those known to be involved in interactions. Fluorescent and
      luminescent proteins can be used in these assays. Methods of selecting
      suitable reporters for high-throughput or high-content (high-context)
      assays is described for a range of reporters, with particular detail
      provided for examples of monomeric enzymes and fluorescent proteins.
      Methods are described for constructing such assays for one or more steps
      in a biochem. pathway and testing the effects of compds. from libraries of
      candidate substances. Single-color and multi-color assays are disclosed.
      Further disclosed are universal expression vectors with cassettes that
      allow the rapid construction of assays for a large and diverse number of
      gene/reporter combinations. The development of such assays is shown to be
      straightforward, providing for a broad, flexible and biol. relevant
      platform for drug discovery. Use of reporter fragment-labeled **p53**
      and **checkpoint kinase** Chk1 to screen for the ability
      of known drugs to modulate the interaction of the two proteins is
      demonstrated. The use of the method to study the effects of proteins
      interacting with these two proteins on their interactions is also
      demonstrated.

```
L6    ANSWER 2 OF 5  USPAT2 on STN
AN       2003:10281  USPAT2
TI       Cell-cycle checkpoint genes
IN       Carr, Antony Michael, MRC Cell Mutation Unit, University of Sussex,
         Falmer Brighton BN1 9RR, UNITED KINGDOM
PI       US 6632936      B2      20031014
         WO 9709433   19970313
AI       US 1999-29047         19990511 (9)            reviewed  <--
         WO 1996-GB2197        19960906
PRAI     GB 1995-18220    19950906
DT       Utility
FS       GRANTED
EXNAM    Primary Examiner: Caputa, Anthony C.; Assistant Examiner: Nickol, Gary
         B.
LREP     Marshall, Gerstein & Borun
CLMN     Number of Claims: 6
ECL      Exemplary Claim: 1
DRWN     1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 3723
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
```

AB   This invention relates to a class of checkpoint genes and their
         polypeptide products which control progression through the cell cycle in
         eukaryotic cells. In particular this invention relates to
         Schizosaccharomyces pombe rad3 gene, to its human homologue (ATR) and to
         their encoded proteins. The invention further relates to assay methods
         for selecting compounds which modulate the activity of the polypeptide
         products of these checkpoint genes and the use of the selected compounds

in anticancer therapy.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6   ANSWER 3 OF 5   CAPLUS   COPYRIGHT 2006 ACS on STN
AN   1998:414270   CAPLUS
DN   129:146329
TI   Protein kinase mutants of human ATR increase sensitivity to UV and
      ionizing radiation and abrogate cell cycle checkpoint control
AU   Wright, Jocyndra A.; Keegan, Kathleen S.; Herendeen, Daniel R.; Bentley,
      Nicola J.; Carr, Antony M.; Hoekstra, Merl F.; Concannon, Patrick
CS   Virginia Mason Research Center, Seattle, WA, 98101, USA
SO   Proceedings of the National Academy of Sciences of the United States of
      America (1998), 95(13), 7445-7450
      CODEN: PNASA6; ISSN: 0027-8424
PB   National Academy of Sciences
DT   Journal
LA   English
AB   In fission yeast, the rad3 gene product plays a critical role in sensing DNA
      structure defects and activating damage response pathways. A structural
      homolog of rad3 in humans (ATR) has been identified based on sequence
      similarity in the protein kinase domain. General information regarding
      ATR expression, protein kinase activity, and cellular localization is
      known, but its function in human cells remains undetd. In the current
      study, the ATR protein was examined by gel filtration of protein exts. and
      was found to exist predominantly as part of a large protein complex. A
      kinase-inactivated form of the ATR gene was prepared by site-directed
      mutagenesis and was used in transfection expts. to probe the function of
      this complex. Introduction of this kinase-dead ATR into a normal
      fibroblast cell line, an ATM-deficient fibroblast line derived from a
      patient with ataxia-telangiectasia, or a p53 mutant cell line
      all resulted in significant losses in cell viability. Clones expressing
      the kinase-dead ATR displayed increased sensitivity to x-rays and UV and a
      loss of checkpoint control. We conclude that ATR functions as a critical
      part of a protein complex that mediates responses to ionizing and UV
      radiation in human cells. These responses include effects on cell
      viability and cell cycle checkpoint control.
RE.CNT 22   THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6   ANSWER 4 OF 5   MEDLINE on STN
AN   1998044285   MEDLINE
DN   PubMed ID: 9382850
TI   Atm-dependent interactions of a mammalian chk1 homolog with meiotic
      chromosomes.
AU   Flaggs G; Plug A W; Dunks K M; Mundt K E; Ford J C; Quiggle M R; Taylor E
      M; Westphal C H; Ashley T; Hoekstra M F; Carr A M
CS   ICOS Corporation 22021 20th Avenue S.E., Bothell, Washington 98021, USA.
SO   Current biology : CB, (1997 Dec 1) 7 (12) 977-86.
      Journal code: 9107782. ISSN: 0960-9822.
CY   ENGLAND: United Kingdom
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
OS   GENBANK-AF032874; GENBANK-AF032875
EM   199802
ED   Entered STN: 19980226
      Last Updated on STN: 19980226
      Entered Medline: 19980219
AB   BACKGROUND: Checkpoint pathways prevent cell-cycle progression in the
      event of DNA lesions. Checkpoints are well defined in mitosis, where
      lesions can be the result of extrinsic damage, and they are critical in
      meiosis, where DNA breaks are a programmed step in meiotic recombination.
      In mitotic yeast cells, the Chk1 protein couples DNA repair to the
      cell-cycle machinery. The Atm and Atr proteins are mitotic cell-cycle

proteins that also associate with chromatin during meiotic prophase I.
The genetic and regulatory interaction between Atm and mammalian Chk1
appears to be important for integrating DNA-damage repair with cell-cycle
arrest. RESULTS: We have identified structural homologs of yeast Chk1 in
human and mouse. Chk1(Hu/Mo) has protein kinase activity and is expressed
in the testis. Chk1 accumulates in late zygotene and pachytene
spermatocytes and is present along synapsed meiotic chromosomes. Chk1
localizes along the unsynapsed axes of X and Y chromosomes in pachytene
spermatocytes. The association of Chk1 with meiotic chromosomes and
levels of Chk1 protein depend upon a functional Atm gene product, but Chk1
is not dependent upon **p53** for meiosis I functions. Mapping of
CHK1 to human chromosomes indicates that the gene is located at 11q22-23,
a region marked by frequent deletions and loss of heterozygosity in human
tumors. CONCLUSIONS: The Atm-dependent presence of Chk1 in mouse cells
and along meiotic chromosomes, and the late pachynema co-localization of
Atr and Chk1 on the unsynapsed axes of the paired X and Y chromosomes,
suggest that Chk1 acts as an integrator for Atm and Atr signals and may be
involved in monitoring the processing of meiotic recombination.
Furthermore, mapping of the CHK1 gene to a region of frequent loss of
heterozygosity in human tumors at 11q22-23 indicates that the CHK1 gene is
a candidate tumor suppressor gene.

L6   ANSWER 5 OF 5   MEDLINE on STN
AN   1998044309   MEDLINE
DN   PubMed ID: 9382823
TI   Cell-cycle signaling: Atm displays its many talents.
AU   Westphal C H
CS   Department of Genetics and Howard Hughes Medical Institute, Harvard
      Medical School, 200 Longwood Avenue, Boston, Massachusetts 02115, USA..
      westphal@rascal.med.harvard.edu
SO   Current biology : CB, **(1997 Dec 1)** 7 (12) R789-92. Ref: 25
      Journal code: 9107782. ISSN: 0960-9822.
CY   ENGLAND: United Kingdom
DT   Journal; Article; (JOURNAL ARTICLE)
      General Review; (REVIEW)
      (REVIEW, TUTORIAL)
LA   English
FS   Priority Journals
EM   199802
ED   Entered STN: 19980226
      Last Updated on STN: 19980226
      Entered Medline: 19980219
AB   The discovery of multiple signaling cascades downstream of Atm may lead to
      a clearer understanding of the diverse defects seen in
      ataxia-telangiectasia. These pathways - which include evolutionarily
      conserved Chk1 and Atr, and non-conserved p21, **p53** and AbI -
      guard genomic integrity after DNA damage.

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L1   2 S E4 AND PY=1999

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                    SEL L2 CHEM

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        AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS,
        CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB,
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            468    FILE BIOSIS
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              9    FILE CABA
            709    FILE CAPLUS
              4    FILE CIN
              5    FILE CONFSCI
             61    FILE DDFU
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             27    FILE DISSABS
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             16    FILE EMBAL
            722    FILE EMBASE
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            438    FILE SCISEARCH
              1    FILE SYNTHLINE
            594    FILE TOXCENTER
            166    FILE USPATFULL
              8    FILE USPAT2
             40    FILE WPIDS
             40    FILE WPINDEX
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                    SEA L3 AND P53 AND PY<1999
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              0*   FILE FOREGE
              2    FILE MEDLINE
              0*   FILE PHAR
              0*   FILE PROUSDDR
              1    FILE USPAT2
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Refine Search

Search Results -

Terms	Documents
L1 and p53	1

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JPO Abstracts Database
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IBM Technical Disclosure Bulletins
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Search:

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L6
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L5	(ATR and p53) and (l1)	1	L5
L4	L3 and (inhibition)	1	L4
L3	L2 and (ATR)	1	L3
L2	L1 and p53	1	L2
L1	6632936.pn.	1	L1

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NLM Catalog
NLM Gateway
TOXNET
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☐ **1:** Suzuki H, Sawai H, Piaseczny W.   Related Articles, Links

Chemical Genetic Algorithms-Evolutionary Optimization of Binary-to-Real-Value Translation in Genetic Algorithms.
Artif Life. 2006 Winter;12(1):89-115.
PMID: 16393452 [PubMed - in process]

☐ **2:** Pan-Hammarstrom Q, Lahdesmaki A, Zhao Y, Du L, Zhao Z, Wen S, Ruiz- Related Articles, Links
Perez VL, Dunn-Walters DK, Goodship JA, Hammarstrom L.

Disparate roles of ATR and ATM in immunoglobulin class switch recombination and somatic hypermutation.
J Exp Med. 2006 Jan 3; [Epub ahead of print]
PMID: 16390936 [PubMed - as supplied by publisher]

☐ **3:** Chang GS, Ambrosek RG.   Related Articles, Links

Hardening neutron spectrum for advanced actinide transmutation experiments in the ATR.
Radiat Prot Dosimetry. 2005;115(1-4):63-8.
PMID: 16381683 [PubMed - in process]

☐ **4:** Choudhury A, Cuddihy A, Bristow RG.   Related Articles, Links

Radiation and New Molecular Agents Part I: Targeting ATM-ATR Checkpoints, DNA Repair, and the Proteasome.
Semin Radiat Oncol. 2006 Jan;16(1):51-8.
PMID: 16378907 [PubMed - in process]

☐ **5:** Kang SY, Bremer PJ, Kim KW, McQuillan AJ.   Related Articles, Links

Monitoring metal ion binding in single-layer pseudomonas aeruginosa biofilms using ATR-IR spectroscopy.
Langmuir. 2006 Jan 3;22(1):286-91.
PMID: 16378433 [PubMed - in process]

☐ **6:** Ignatova M, Voccia S, Gilbert B, Markova N, Cossement D, Gouttebaron   Related Articles, Links
R, Jerome R, Jerome C.

Combination of electrografting and atom-transfer radical polymerization for making the stainless steel surface antibacterial and protein antiadhesive.
Langmuir. 2006 Jan 3;22(1):255-62.
PMID: 16378429 [PubMed - in process]

☐ **7:** Faucheux A, Gouget-Laemmel AC, Henry de Villeneuve C, Boukherroub   Related Articles, Links
R, Ozanam F, Allongue P, Chazalviel JN.

Well-defined carboxyl-terminated alkyl monolayers grafted onto H-Si(111): packing density from a combined AFM and quantitative IR study.
Langmuir. 2006 Jan 3;22(1):153-62.
PMID: 16378414 [PubMed - in process]

☐ **8:** Hegde S, Kapoor S, Joshi S, Mukherjee T.   Related Articles, Links

Self-assembly of Ag nanoparticle-biotin composites into long fiberlike

microstructures.
J Colloid Interface Sci. 2005 Dec 22; [Epub ahead of print]
PMID: 16376926 [PubMed - as supplied by publisher]

9: Wada T, Sakakibara M, Fukushima Y, Saitoh S.   Related Articles, Links

A novel splicing mutation of the ATRX gene in ATR-X syndrome.
Brain Dev. 2005 Dec 20; [Epub ahead of print]
PMID: 16376512 [PubMed - as supplied by publisher]

10: Steenkamp PA, Harding NM, van Heerden FR, van Wyk BE.   Related Articles, Links

Identification of atractyloside by LC-ESI-MS in alleged herbal poisonings.
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[Expression of ATR-Fc fusion protein in CHO cells]

[Article in Chinese]

Gao LH, Hu XW, Chen W, Xu JJ, Zhao J, Chen HP.

Beijing Institute of Biotechnology, Beijing 100071, China.

ATR-Fc is a fusion protein consisting of extracellular domain of human anthrax toxin receptor (ATR) and a fragment (hinge, CH2, and CH3 domains) of the Fc of human IgG1. The aim of ATR-Fc expression is to get an antibody-like molecule binding to protective antigen (PA), a component of anthrax toxins, this fusion protein may compete with cell surface receptor for PA binding, and block the transport of lethal factor (LF) and edema factor (EF) into cells, thereby act as an antitoxin to prevent and treat anthrax infection. A DNA fragment encoding N-terminal amino acids 1-227 of ATR and human IgG1 Fc was inserted into the Hind III and Not I sites of pcDNA3.1 to generate the eukaryotic vector pcDNA3.1/ATR-Fc for expression of ATR-Fc fusion protein. Using lipofectine-mediated gene transfer technique, pcDNA3.1/ATR-Fc was transfected into CHO-K1 cells. After selected with G418, a recombinant CHO cell line, ATR-Fc-1D5, whose expression level was about 10 - 15 microg/(10(6) cells x d), was established. The recombinant protein expressed by the ATR-Fc-1D5 cells was purified with protein A chromatography. The experimental results demonstrated a direct and specific interaction between ATR-Fc and PA assessed by ELISA.

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